

REMARKS

This paper is filed in response to the final official action dated July 5, 2005 (hereafter, the official action). This paper is timely-filed, as it is accompanied by a petition for an extension of time to file in the first month and authorization to charge our deposit account no. 13-2855 to cover the requisite fee of \$120.00.

Claims 1, 2, and 4-39 are pending in this application. Claims 9, 15, 19, and 22 have been objected to, but are allowable in substance, and claim 39 has been allowed. Thus, claims 1, 2, 4-8, 10-14, 16-18, 20, 21, and 23-38 remain at issue.

Claims 1, 2, 4, 5, 7, 8, 10, 14, 18, 20, and 21 have been rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 3,928,554 to Hirschfeld ("Hirschfeld"). Claims 6, 11-13, 16, and 17 have been rejected under 35 U.S.C. §103(a) as obvious over Hirschfeld. Claims 23-37 and 38 have been rejected under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 3,849,143 to Hubbard ("Hubbard") in view of Hirschfeld.¹

By the foregoing, claim 1 has been amended. Support for the amendments may generally be found throughout the application as filed. More specifically, support may be found at page 9, lines 19-20 of the present application.

The accompanying amendments are proper under 37 C.F.R. §1.116 practice and should be entered because the rejections set forth in the previous office action have been overcome. Moreover, these amendments should be entered because they do not present new issues requiring further consideration or search. Finally, the amendments should be entered because they place the application in condition for allowance (or in better condition for appeal).

The various bases for the claim rejections are addressed below in the order presented in the official action. Reconsideration of the application, in view of the foregoing amendments and the following remarks, is solicited.

¹ In the official action, the examiner indicated that claim 37 was rejected over the combination of Hubbard and Hirschfeld. The applicants assume that the examiner meant to reject claim 37 over Hirschfeld alone, and are proceeding on this basis.

CLAIM REJECTIONS – 35 U.S.C. §102

Claims 1, 2, 4, 5, 7, 8, 10, 14, 18, 20, and 21 have been rejected under 35 U.S.C. §102(b) as anticipated by Hirschfeld. The applicants respectfully traverse the rejections.

It is well-established that each and every limitation of a claimed invention must be present in a single prior art reference in order for anticipation to occur. *See, for example, C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1349 (Fed. Cir. 1998). The standard for anticipation is one of strict identity. This standard has not been satisfied with respect to the pending claims, as amended herein.

Hirschfeld teaches an emulsion for staining biological samples. *See, e.g.*, Hirschfeld at column 1, lines 4-7. The emulsion is a dye mixture comprising a plurality of dyes “which are ordinarily incompatible.” *See* Hirschfeld at column 1, lines 49-53. The “several vehicles in which the respective dyes are dissolved are substantially immiscible with one another or with a dispersion medium in which the respective dye-baths are suspended as a dispersed phase.” *See* Hirschfeld at column 3, lines 35-39.

Hirschfeld does not specifically teach the dye concentrations of the various immiscible phases. However, Hirschfeld generally teaches that “[f]or most biological staining, it is desired to saturation stain, i.e., to load the sample with the maximum amount of dye that will bind to the latter.” *See* Hirschfeld at column 2, lines 17-19. In example 1, Hirschfeld discloses an emulsion composition comprising a 1×10^{-4} molar (“M”) solution of a first fluorescent staining dye (8-p-toluidino-1-naphthalene-sulfonic acid (“TNS”)) in benzyl alcohol and a 1×10^{-4} M solution of a second fluorescent staining dye (ethidium bromide) in water. This corresponds to a first solution comprising about 0.0030 weight percent TNS and a second solution comprising about 0.0039 weight percent ethidium bromide, which were calculated as follows:

Calculation 1: [1×10^{-4} moles TNS/ 1000 mL benzyl alcohol] X [313.37 grams TNS/ 1 mol TNS] X [1 mL benzyl alcohol/1.045 grams] = about 0.0030 weight percent TNS

Calculation 2: [1×10^{-4} moles ethidium bromide/ 1000 mL water] X [394.31 grams ethidium bromide/ 1 mol ethidium bromide] X [1 mL water/1.0 gram] = about 0.0039 weight percent ethidium bromide.

In example 2, Hirschfeld discloses an emulsion composition comprising a first solution of a visible staining dye (methyl green) in methyl benzoate having a concentration "as high as" 1×10^{-2} M and a second 1×10^{-4} M solution of a fluorescent staining dye (4,4'-bis-4-(3-sulfoanilino)-6[bis(2-hydroxy-ethyl)-amino]-1,3,5-triazin-2-yl-amino-stilbene-2,2'-disulfonic acid tetrasodium salt ("LN")) in an aqueous solvent. This corresponds to a first solution comprising about 0.56 weight percent methyl green and a second solution comprising about 0.012 weight percent LN, which were calculated as follows:

Calculation 1: [1×10^{-2} moles methyl green/ 1000 mL methyl benzoate] X [608.79 grams methyl green/ 1 mol methyl green] X [1 mL methyl benzoate/1.088 grams] = 0.56 weight percent methyl green

Calculation 2: [1×10^{-4} moles LN/ 1000 mL aqueous solution] X [1164 grams LN/ 1 mol LN] X [1 mL aqueous solution/1.0 gram] = 0.012 weight percent LN.

Thus, Hirschfeld does not disclose a multi-color writing ink consisting essentially of a mixture of a first ink composition and a second ink composition wherein the first ink composition comprises at least about 0.1 weight percent of the first dye, and the second ink composition comprises at least about 0.1 weight percent of the second dye, as recited by claims 1, 2, 4, 5, 7, 8, 10, 14, 18, 20, and 21.

For the foregoing reasons, it is respectfully submitted that the outstanding anticipation rejections of claims 1, 2, 4, 5, 7, 8, 10, 14, 18, 20, and 21 over Hirschfeld have been overcome and should be withdrawn.

CLAIM REJECTIONS -- 35 U.S.C. §103(a)

Claims 6, 11-13, 16, 17, and 37 have been rejected as obvious over Hirschfeld. Claims 23-36 and 38 have been rejected as obvious over U.S. Patent No. 3,849,143 to Hubbard ("Hubbard") in view of Hirschfeld. The applicants respectfully traverse the rejections.

A *prima facie* case of obviousness requires satisfaction of three legal criteria. First, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. Second, there must be a reasonable expectation of success in doing so. Third, prior art references, when combined, must teach or suggest all of the claim limitations. (See M.P.E.P. §2142).

Here, each of these three criteria cannot be demonstrated with respect to the claims, as amended herein, and therefore the rejections should be withdrawn.

Claims 6, 11-13, 16, 17, and 37 -- Hirschfeld

As previously indicated, Hirschfeld does not disclose a multi-color writing ink consisting essentially of a mixture of a first ink composition and a second ink composition wherein the first ink composition comprises at least about 0.1 weight percent of the first dye, and the second ink composition comprises at least about 0.1 weight percent of the second dye, as recited by claim 1. The applicants further submit that Hirschfeld *does not provide any motivation or suggestion for increasing the dye concentration contents of the immiscible solutions of the emulsion*, and therefore does not suggest the ink composition recited by claim 1 and dependent claims 6, 11-13, 16, 17, and 37.

For example, Hirschfeld teaches that “[f]or most biological staining, it is desired to saturation stain, i.e., to load the sample with the maximum amount of dye that will bind to the latter.” See Hirschfeld at column 2, lines 17-19. Hirschfeld further teaches that “[t]he concentration of stain therefore in any of the immiscible liquid phases of the invention should be high enough to meet the foregoing requirements and this can readily be achieved by providing a substantially greater amount of stain dissolved in each immiscible phase than is necessary to achieve total saturation staining of the desired sample by that dye alone from a simple solution of the dye.” Thus, Hirschfeld discloses compositions having ‘saturation staining concentrations,’ and does not provide the requisite motivation to modify the immiscible dye solutions as recited by pending claims 6, 11-13, 16, 17, and 37.

Furthermore, at least one of the dyes is a fluorescent staining dye in each of Hirschfeld’s examples. Biological dyes that fluoresce generally have high association constants; thus, it is not necessary to use a lot of dye in order to detect the desired analyte. Accordingly, Hirschfeld does not provide any motivation or suggestion for increasing the dye concentration contents of the various immiscible solutions, as recited by the pending claims.

For these reasons, the rejections of claims 6, 11-13, 16, 17, and 37 as obvious over Hirschfeld should be withdrawn.

Claims 23-36 and 38 – Hubbard in view of Hirschfeld

As previously set forth, Hirschfeld is directed to an emulsion composition for staining biological samples. Hirschfeld does not disclose or suggest combining the disclosed emulsion staining composition with a fibrous ink reservoir, as recited by claims 23-36 and 38. Thus, the examiner turned to Hubbard, which is directed “an ink composition which may be injected into a marker body of any shape or configuration.” See Hubbard at column 1, lines 5-7. However, Hirschfeld is not properly combinable with Hubbard because it is directed to a staining composition and not a writing instrument, and thus constitutes non-analogous art relative to Hubbard. Because Hirschfeld does not disclose or provide an expectation that the disclosed emulsion composition could be used in a writing instrument, the rejections of claims 23-36 and 38 have been overcome and should be withdrawn.

Furthermore, Hubbard teaches that “the ink and the asbestos [fibers of the ink storage system] *must* have a certain amount of mutual attractiveness so as to form the viscous *single phase composition which is essential to the present invention.*” See Hubbard at column 3, lines 2-5. In contrast, the present application explicitly discloses that “the individual ink compositions should remain *immiscible* in each other when inside the ink reservoir....” See the present application at page 4, lines 15-16. It is respectfully submitted that an obviousness rejection based upon a reference that specifically teaches against the claimed invention is manifestly improper, and should not be made. For this additional reason, it is respectfully submitted that the rejections of claims 23-36 and 38 over Hubbard in view of Hirschfeld should be withdrawn.

CONCLUSION

It is respectfully submitted that this application is now in condition for allowance. Should the examiner wish to discuss the foregoing, or any matter of form or procedure in an effort to advance this application to allowance, she is respectfully invited to contact the undersigned attorney at the indicated telephone number.

Respectfully submitted,

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Please see attached. Thank you.